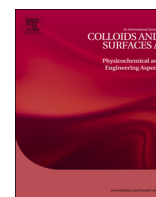




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# Nanoassociates of amphiphilic carboxy-calixresorcinarene and cetylpyridinium chloride: The search of optimal macrocycle/surfactant molar ratio

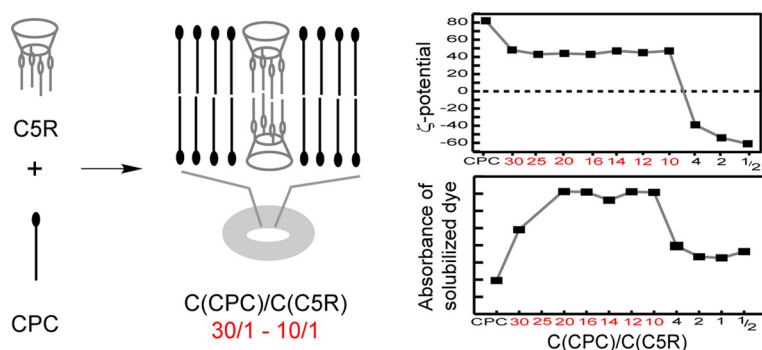
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## GRAPHICAL ABSTRACT



## ARTICLE INFO

### Keywords:

Calix[4]resorcinarene  
Cetylpyridinium chloride  
Supramolecular system  
FT-PGSE NMR  
Solubilization

## ABSTRACT

Here we present the supramolecular surfactant-macrocycle system which properties are independent on system composition in the wide range of components concentrations. The study of the interaction of octacarboxy-tetra (*p*-phenylene-oxy-pentyl)calixresorcinarene (C5R) and cetylpyridinium chloride (CPC) in mixed aqueous solutions were performed by dynamic light scattering and electrophoretic methods, <sup>1</sup>H and FT-PGSE NMR methods, absorption and fluorescence spectroscopy, and TEM. The variation of CPC/C5R molar ratio from 30/1 to 10/1 leads to the formation of nanoassociates with similar composition, size, surface potential value, and improved (in compare with CPC) solubilizing properties. The preparation of mixed supramolecular systems which properties are independent on system composition in the wide range of components concentrations is an elegant example of the producing of colloidal materials with the required morphology and properties.

## 1. Introduction

The design of nanosized supramolecular associates is one of the opportunities to construct multifunctional smart materials and

nanocontainers [1–6]. The advantages of their creation using the supramolecular approach are easy and reproducible non-covalent synthesis, which controls the systems composition and morphology. Nano-sized supramolecular associates have a potential to be applied in the

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<https://doi.org/10.1016/j.colsurfa.2018.05.077>

Received 13 February 2018; Received in revised form 25 May 2018; Accepted 27 May 2018

Available online 28 May 2018

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